US Army Corps of Engineers ®
Tulsa District

Blue-Green Algae Data 2011-2012

The U.S. Army Corps of Engineers bases the issuance of ADVISORIES and WARNINGS at Lake Texoma based upon the World Health Organization (WHO) guidelines presented in: Guidelines for Safe Recreational Water Environments, published by the WHO in 2003 (http://www.who.int/water_sanitation_health/bathing/srwe1/en/).

TABLE 8.3. GUIDELINES FOR SAFE PRACTICE IN MANAGING RECREATIONAL WATERS[a]

Guidance level or situation	How guidance level derived	Health risks	Typical actions[b]
Relatively low probability of adverse health effects			
20000 cyanobacterial cells/ml *or* 10 µg chlorophyll-a/litre with dominance of cyanobacteria	• From human bathing epidemiological study	• Short-term adverse health outcomes, e.g., skin irritations, gastrointestinal illness	• Post on-site risk advisory signs • Inform relevant authorities
Moderate probability of adverse health effects			
100000 cyanobacterial cells/ml *or* 50 µg chlorophyll-a/litre with dominance of cyanobacteria	• From provisional drinking-water guideline value for microcystin-LR[c] and data concerning other cyanotoxins	• Potential for long-term illness with some cyanobacterial species • Short-term adverse health outcomes, e.g., skin irritations, gastrointestinal illness	• Watch for scums or conditions conducive to scums • Discourage swimming and further investigate hazard • Post on-site risk advisory signs • Inform relevant authorities
High probability of adverse health effects			
Cyanobacterial scum formation in areas where whole-body contact and/or risk of ingestion/aspiration occur	• Inference from oral animal lethal poisonings • Actual human illness case histories	• Potential for acute poisoning • Potential for long-term illness with some cyanobacterial species • Short-term adverse health outcomes, e.g., skin irritations, gastrointestinal illness	• Immediate action to control contact with scums; possible prohibition of swimming and other water contact activities • Public health follow-up investigation • Inform public and relevant authorities

[a] Derived from Chorus & Bartram, 1999.

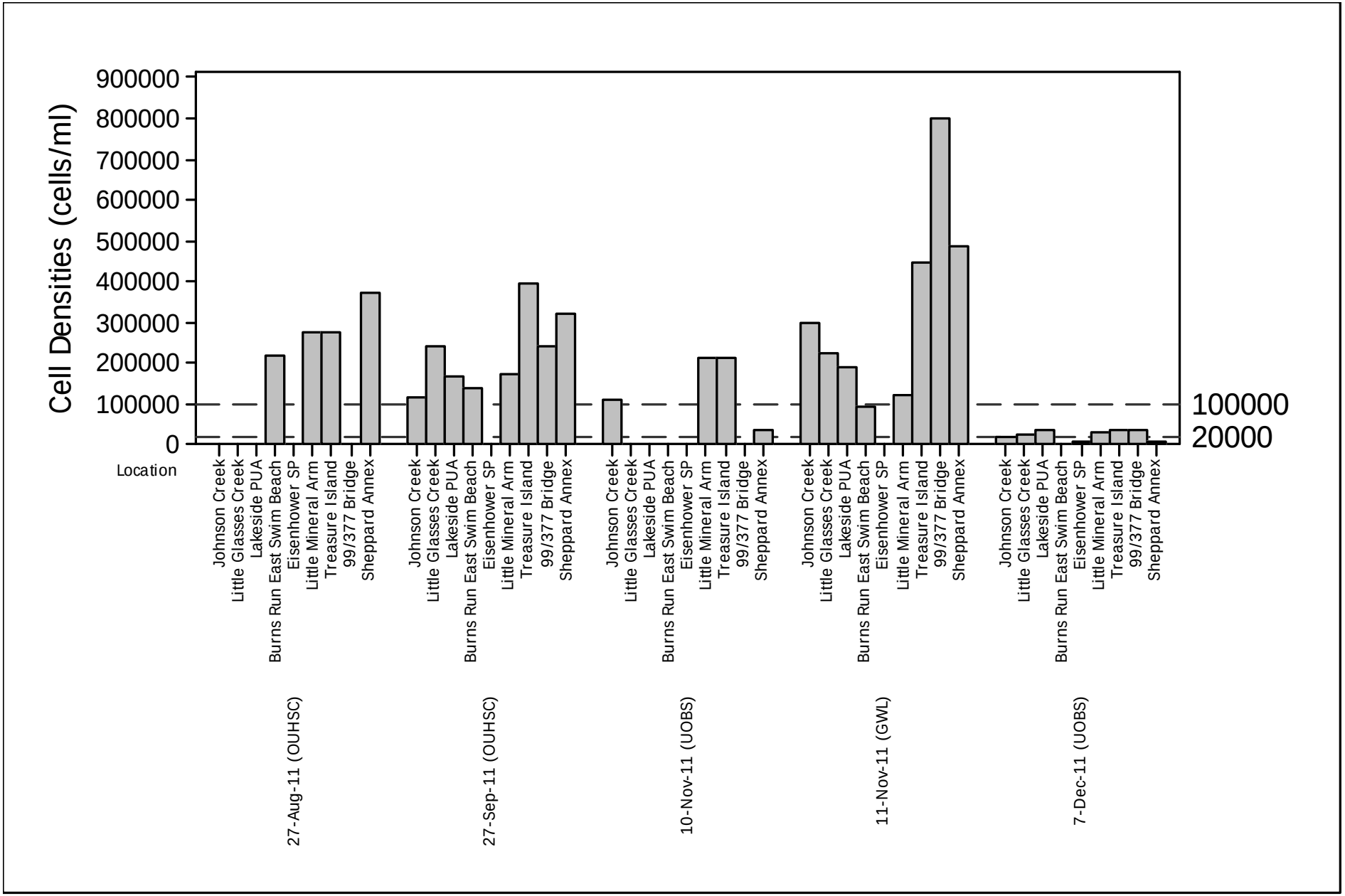
[b] Actual action taken should be determined in light of extent of use and public health assessment of hazard.

[c] The provisional drinking-water guideline value for microcystin-LR is 1 µg/litre (WHO, 1998).

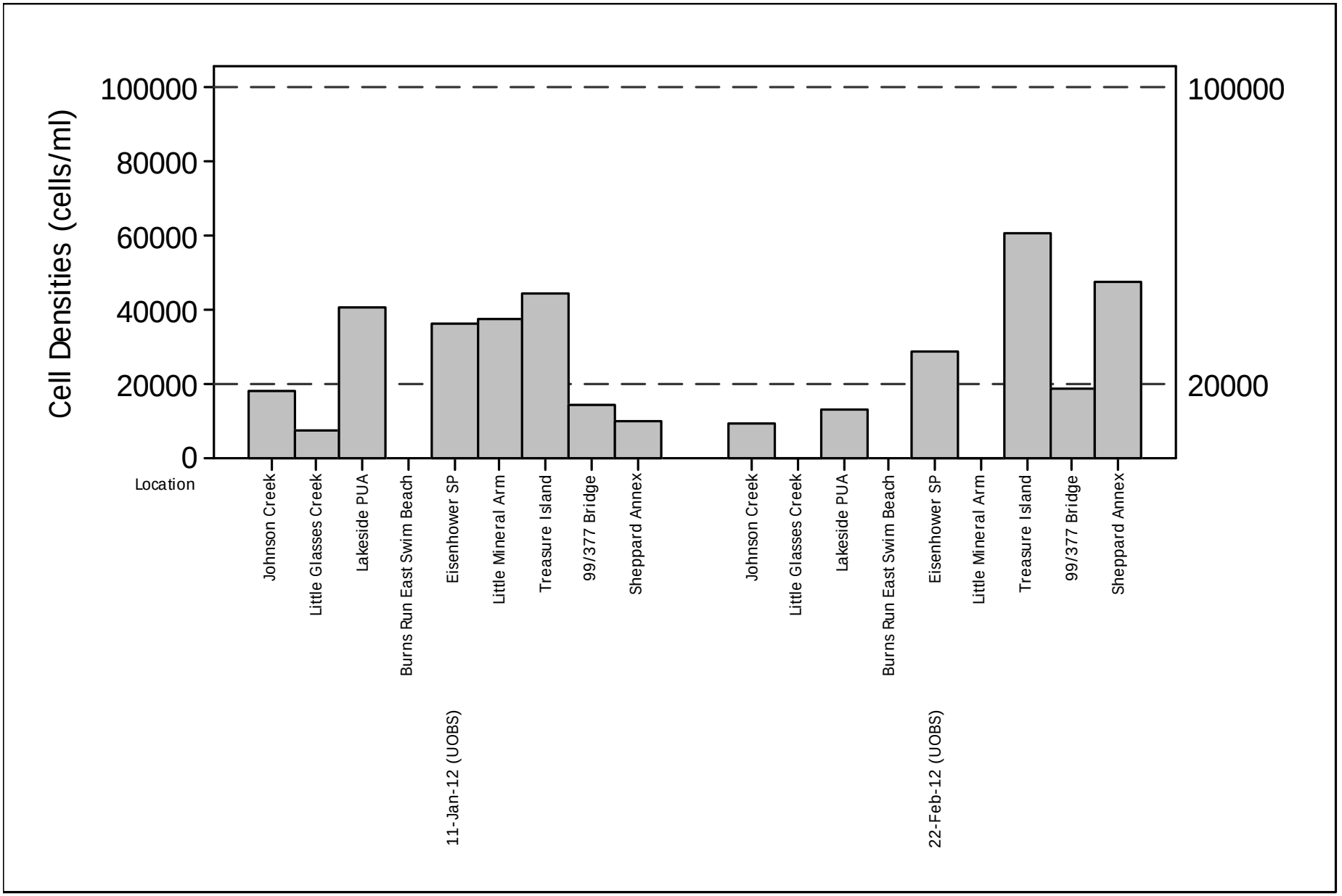
Total blue-green algae cell counts (cells/ml) from sampling locations throughout Lake Texoma from August 27, 2011 through February 22, 2012.

Location	27 Aug 2011 (OUHSC)	27 Sep 2011 (OUHSC)	10 Nov 2011 (UOBS)	11 Nov 2011 (GWL)	07 Dec 2011 (UOBS)	11 Jan 2012 (UOBS)	22 Feb 2012 (UOBS)
Johnson Creek		117,000	106,200	295,069	14,331	18,374	9,554
Little Glasses Creek		240,137		224,836	24,621	7,349	0
Lakeside PUA		165,047		189,886	34,910	41,035	13,229
Burns Run East Swim Beach	216,032	138,516		93,135			
Eisenhower SP					5,512	36,380	29,030
Little Mineral Arm	273,005	172,347	212,767	121,300	30,500	37,850	0
Treasure Island	277,589	392,637	212,767	445,013	34,910	44,832	60,633
99/377 Bridge		243,279		799,110	33,073	14,699	19,109
Sheppard Annex	371,800	319,011	33,073	484,711	7,349	10,289	47,772

The dominate genera have included *Cylindrospermopsis, Planktolyngbya, Pseudanabaena, Planktothrix, and Microcystis*.



Total blue-green algae cell counts (cells/ml) from sampling locations throughout Lake Texoma from August 27, 2011 through December 7, 2011. WHO Advisory threshold is 20,000 cells/ml. WHO Warning threshold is 100,000 cells/ml.



Total blue-green algae cell counts (cells/ml) from sampling locations throughout Lake Texoma from January 11, 2012 through February 22, 2012. WHO Advisory threshold is 20,000 cells/ml. WHO Warning threshold is 100,000 cells/ml.